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EXAMINER	
GILLIS, BRIAN J	

ART UNIT	PAPER NUMBER
2141	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/691,109	CONTA ET AL.	
	Examiner	Art Unit	
	Brian J. Gillis	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 14-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *11-13* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04152006*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *10202006*.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claim 14 in the phone interview on October 16, 2006 is acknowledged.

Claim Objections

Claims 8, 14, 16, 18, 19, 20 are objected to because of the following informalities: The claims recite the abbreviation "L2". It is unclear what the abbreviation stands for. Appropriate correction is required.

Claims 8, 16, 18, 19, 20 are objected to because of the following informalities: The claim recites the abbreviation "L3". It is unclear what the abbreviation stands for. Appropriate correction is required.

Claims 14, 29, 30, 39, 40 are objected to because of the following informalities: The claim recites the abbreviation "MPLS". It is unclear what the abbreviation stands for. Appropriate correction is required.

Claim 21 is objected to because of the following informalities: The claim recites, "the forwarding function performs mapping based on contest data". The examiner interprets this as a typographical error and should read, "the forwarding function performs mapping based on context data". Appropriate correction is required.

Claims 24 and 34 are objected to because of the following informalities: The claim recites the abbreviation "MTU". It is unclear what the abbreviation stands for. Appropriate correction is required.

Claims 27 and 37 are objected to because of the following informalities: The claim recites the abbreviations "IPv4" and "Ipv6". It is unclear what the abbreviations stand for. Appropriate correction is required.

Claims 30 and 40 are objected to because of the following informalities: The claim recites the abbreviation "LIB". It is unclear what the abbreviation stands for. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "said step of using the new header as a second search key to a second database" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the forwarding function" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

> applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Davidson et al (US Patent #7,111,065).

(Claim 9 discloses) a uniform method for implementing multiple tunneling protocols in a switch or router, comprising: a) associating an input interface, an output interface, and an information database with each of said multiple tunneling protocols (Davidson et al shows a tunnel server holds routing information for each client (column 7, lines 13-26).); and b) uniformly implementing a tunneling protocol by selecting an input interface, an output interface, and an information database associated with the tunneling protocol to be implemented (Davidson et al shows the tunnel server communicates with a client by use of the information stored at the tunnel (column 7, lines 27-42)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 15, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Nanji et al (IS Patent #6,920,503).

Claim 1 discloses a uniform method for implementing multiple tunneling protocols in a switch or router having a plurality of input interfaces and a plurality of output interfaces, comprising: a) providing a finite set of tunnel interfaces, each tunnel interface characterized by a set of tunnel specific attributes; b) mapping one of the input interfaces to one of said tunnel interfaces; and c) mapping said one of said tunnel interfaces to one of the output interfaces. Davidson et al teaches of routing tables store information associated with data channel addresses (column 5, lines 10-12, column 7, lines 22-26), mapping input data with a tunnel interface (column 9, line 34 – column 10, line 3). It fails to teach of mapping a tunnel interface to an output interface. Nanji et al teaches of passing data to a tunnel routine, which then sends the data out (column 4, lines 20-42).

Davidson et al and Nanji et al are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the output mapping in Nanji with the system in Davidson et al because tunnel internetworking enables a provider to carry traffic between different protocols providing service to ISP customers regardless of the protocols used by customers (Nanji, column 5, lines 27-41).

Claim 2 discloses the method according to claim 1, wherein: said tunnel specific attributes including parameters identifying tunnel end points. Nanji et al further teaches of a session structure, which indicates the egress tunnels (column 4, line 55 – column 5, line 6).

Claim 3 discloses the method according to claim 1, wherein: said step of mapping one of the input interfaces to one of said tunnel interfaces is performed by using context data in an arriving packet as a first search key to a first database. Nanji et al further teaches of the first packet received is the control packet (column 4, lines 13-19).

Claim 4 discloses the method according to claim 3, wherein: said arriving packet has a header and said context data is obtained from said header. Davidson et al further teaches of packets including configuration headers, which carry configuration information (column 6, lines 50-57)).

Claim 15 discloses a uniform method for implementing multiple tunneling protocols in a switch or router having a plurality of input streams and a plurality of output streams, comprising: a) providing a finite set of tunnel interfaces; and b) mapping input streams and output streams to tunnel interfaces in a uniform manner. Davidson et al teaches of routing tables store information associated with data channel addresses (column 5, lines 10-12, column 7, lines 22-26) and input data is mapped (column 9, line 34 – column 10, line 3). It fails to teach of mapping a tunnel interface to an output interface. Nanji et al teaches of passing data to a tunnel routine, which then sends the data out (column 4, lines 20-42).

Davidson et al and Nanji et al are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the output mapping in Nanji with the system in Davidson et al

because tunnel internetworking enabled a provider to carry traffic between different protocols providing service to ISP customers regardless of the protocols used by customers (Nanji, column 5, lines 27-41).

Claim 21 discloses the method according to claim 15, wherein: the forwarding function performs mapping based on contest data associated with input packets and database information which is configured and updated by a local host. Davidson et al further teaches a server holds information on clients, which is used to assign a client a control channel address (column 7, lines 13-26).

Claim 22 discloses a uniform method for implementing multiple tunneling protocols in a switch or router, comprising: providing a plurality of tunnel interfaces, each tunnel interface having a plurality of parameters which are described in a uniform way, said plurality of parameters including a local source address and a remote destination address. Davidson et al teaches of routing tables store information associated with data channel addresses (column 5, lines 10-12, column 7, lines 22-26) and stores parameters in a uniform way (column 7, lines 22-26). It fails to teach of including a local source address and a remote destination address. Nanji et al teaches of including ingress and egress tunnel information (column 4, line 55 – column 5, line 6).

Davidson et al and Nanji et al are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the output mapping in Nanji with the system in Davidson et al because tunnel internetworking enabled a provider to carry traffic between different

protocols providing service to ISP customers regardless of the protocols used by customers (Nanji, column 5, lines 27-41).

Claims 5-8, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Nanji et al (IS Patent #6,920,503) as applied to claims 4 and 22 above, and further in view of D'Sa et al (US PGPUB US2002/0178355).

Claim 5 discloses the method according to claim 4, further comprising: d) processing said header with said one of said tunnel interfaces to obtain a new header, wherein said step of mapping said one of said tunnel interfaces to one of the output interfaces is performed by using the new header as a second search key to a second database. Davidson et al in view of Nanji et al teaches of a client receiving a network address response header (Davidson, column 7, lines 27-42), and the client processes the header for destination information once received (Davidson, column 7, lines 27-42). It fails to teach of searching using a search key in a second database. D'Sa et al teaches of a database, which holds multiple tables, which are used in searching different types of data (figure 3).

Davidson et al in view of Nanji et al and D'Sa et al are analogous art because they are both related to virtual private networks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the database in D'Sa et al with the system in Davidson et al in view of Nanji et al because a determination as to which access methods are used in the connection is provided (D'Sa, paragraph 21).

Claim 6 discloses the method according to claim 1, wherein: both said step of mapping one of the input interfaces to one of said tunnel interfaces and said step of mapping said one of said tunnel interfaces to one of the output interfaces are performed by using context data in an arriving packet as a first search key to a first database. D'Sa et al further teaches of a database, which has multiple tables to be used to search different types of data (figure 3).

Claim 7 discloses the method according to claim 6, wherein: said arriving packet has a header and said context data is obtained from said header. Davidson et al further teaches of packets including configuration headers, which carry configuration information (column 6, lines 50-57).

Claim 8 discloses the method according to claim 4, wherein: the one of the output interfaces is one of an L2 and an L3 interface, and said step of using the new header as a second search key to a second database yields one of an L2 and an L3 interface. Nanji et al further teaches the tunnel can be various protocols (column 3, lines 37-40). D'Sa et al further teaches of a database, which holds multiple tables, which are used in searching different types of data (figure 3).

Claim 25 discloses the method according to claim 22, further comprising: providing a plurality of tunnel entry node structures and a plurality of tunnel exit node structures. Davidson et al in view of Nanji et al teaches of the limitations of claim 22 as recited above. It fails to teach of providing a plurality of tunnel entry and exit node structures. D'Sa et al teaches of keeping track of endpoint information (paragraph 42).

Davidson et al in view of Nanji et al and D'Sa et al are analogous art because they are both related to virtual private networks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the endpoints table in D'Sa et al with the system in Davidson et al in view of Miller et al because the table is able to keep a list of configured tunnels between a computer and other computer systems (D'Sa, paragraph 42).

Claim 26 discloses the method according to claim 22, further comprising: providing an address function to set tunnel interface source and destination addresses. D'Sa et al further teaches of providing source and destination information (paragraph 42).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Leung (US Patent #6,636,498).

Claim 10 discloses the method according to claim 9, further comprising: c) prior to said step of uniformly implementing, associating a mapping interface and a mapping information base with each of said multiple tunneling protocols. Davidson et al teaches of the limitations of claim 9 as recited above. It fails to teach of associated a mapping interface and a mapping information base with each of said multiple tunneling protocols. Leung teaches of a mapping table, which associates a device with networks (column 7, lines 31-45).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of applicant admitted prior art (AAPA).

Claim 14 discloses the method according to claim 9, wherein: for ETHERNET over MPLS tunnel origination, the input interface is an ETHERNET interface, the output interface is an L2 interface, and the information database is a switching information base. Davidson et al teaches of the limitations of claim 9 as recited above. It fails to teach of an input interface as an ETHERNET interface, the output interface is an L2 interface, and the information database is a switching information base. AAPA teaches of using ETHERNET over MPLS, an interface is a layer 2 interface (page1, line 22 – page 2, line 2), and the FEC-to-NHLFE map is a switching information base (page 7, lines 5-10).

Davidson et al and AAPA are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the ETHERNET over MPLS interface in AAPA with the system in Davidson et al because MPLS tunneling can identify and mark packets with labels to forward the packets (AAPA, page 6, lines 3-8).

Claims 16-20, 23, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Nanji et al (IS Patent #6,920,503) as applied to claims 15 and 22 above, and further in view of Miller et al (US Patent #6,873,627).

Claim 16 discloses the method according to claim 15, wherein: some of the input streams are L2 streams and some of the input streams are L3 streams, said step of providing a finite set of tunnel interfaces includes providing a set of L2 tunnel interfaces

for L2 input streams and a set of L3 tunnel interfaces for L3 input streams. Davidson et al in view of Nanji et al teaches of the limitations of claim 15 as recited above. It fails to teach of some of the input streams are L2 streams and some of the input streams are L3 streams, said step of providing a finite set of tunnel interfaces includes providing a set of L2 tunnel interfaces for L2 input streams and a set of L3 tunnel interfaces for L3 input streams. Miller et al teaches of a packet forwarding system, which can transfer any type of data including L2 and L3 streams (column 8, lines 27-48).

Davidson et al in view of Nanji et al and Miller et al are analogous art because they are both related to packing and sending data over networks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the forwarding system in Miller et al with the system in Davidson et al in view of Nanji et al because a simple, low risk way to configure a network with multicast functionality is provided (Miller, column 8, lines 27-48).

Claim 17 discloses the method according to claim 16, wherein: input streams are mapped to tunnel interfaces by a forwarding function. Miller et al further teaches of using forwarding rules, which are used to map data (column 8, lines 49-62).

Claim 18 discloses the method according to claim 16, wherein: L2 input streams are mapped to L2 tunnel interfaces by a first forwarding function, and L3 input streams are mapped to L3 tunnel interfaces by a second forwarding function. Miller et al further teaches of using forwarding rules, which are used to map data in various ways (column 8, lines 49-62).

Claim 19 discloses the method according to claim 18, wherein: some of the output streams are L2 streams and some of the output streams are L3 streams, L2 tunnel interfaces are mapped to L2 output streams by a third forwarding function, and L3 tunnel interfaces are mapped to L3 output streams by a fourth forwarding function. Miller et al further teaches of using forwarding rules, which are used to map data in various ways (column 8, lines 49-62).

Claim 20 discloses the method according to claim 19, wherein: L2 tunnel interfaces are mapped to L3 output streams by a fifth forwarding function, and L3 tunnel interfaces are mapped to L2 output streams by a sixth forwarding function. Miller et al further teaches of using forwarding rules, which are used to map data in various ways (column 8, lines 49-62).

Claim 23 discloses the method according to claim 22, wherein: said plurality of parameters includes a hop limit or time to live. Davidson et al in view of Nanji et al teaches of the limitations of claim 22 as recited above. It fails to teach of including a hop limit or time to live. Miller et al teaches of including a hop count, which can be set to a limit (column 12, lines 35-49).

Davidson et al in view of Nanji et al and Miller et al are analogous art because they are both related to packing and sending data over networks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the hop count in Miller et al with the system in Davidson et al in view of Nanji et al because the number of servers through which a packet is allowed to travel is limited (Miller, column 11, lines 45-46).

Claim 28 discloses the method according to claim 23, further comprising: providing a hop function to set the hop limit for a tunnel interface. Miller et al further teaches of having the ability to set the hop limit (column 12, lines 35-49).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Nanji et al (IS Patent #6,920,503) in view of Miller et al (US Patent #6,873,627) as applied to claim 23 above, and further in view of Rekhter et al (US Patent #6,339,595).

Claim 24 discloses the method according to claim 23, wherein: said plurality of parameters includes a tunnel MTU. Davidson et al in view of Nanji et al in view of Miller et al teaches of the limitations of claim 23 as recited above. It fails to teach of including a tunnel MTU. Rekhter et al teaches of including a MTU (column 41, lines 40-60).

Davidson et al in view of Nanji et al in view of Miller et al and Rekhter et al are analogous art because they are both related to sending data between networks in tunnels.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the MTU in Rekhter et al with the system in Davidson et al in view of Nanji et al in view of Miller et al because it will make possible to route to a source address of a fragmented packet (Rekhter, column 41, lines 40-60).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Nanji et al (IS Patent #6,920,503) in view of D'Sa et al (US PGPUB US2002/0178355) as applied to claim 26 above, and further in view of Tsirtsis (US PGPUB US2004/0148428).

Claim 27 discloses the method according to claim 26, further comprising: providing a first address function for IPv4 interfaces and a second address function for IPv6 interfaces. Davidson et al in view of Nanji et al in view of D'Sa et al teaches of the limitations of claim 26 as recited above. It fails to teach of providing IPv4 and IPv6 interfaces. Tsirtsis teaches of using both IPv4 and IPv6 (paragraph 32).

Davidson et al in view of Nanji et al in view of D'Sa et al and Tsirtsis are analogous art because they are both related to packet tunneling.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the interface in Tsirtsis with the system in Davidson et al in view of Nanji et al in view of D'Sa et al because the data is able to be moved in networks that support IPv4, IPv6, or both (Tsirtsis, paragraph 32).

Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of Nanji et al (IS Patent #6,920,503) as applied to claim 22 above, and further in view of AAPA.

Claim 29 discloses the method according to claim 22, wherein: said plurality of parameters includes MPLS encapsulation information and actions to be performed on MPLS packets. Davidson et al in view of Nanji et al teaches of the limitations of claim 22 as recited above. It fails to tech of including MPLS encapsulation information and actions to be performed on MPLS packets. AAPA teaches of an incoming label map, which specifies what actions to take when a packet is received (page 6, line 21 – page 7, line 3).

Davidson et al in view of Nanji et al and AAPA are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the incoming label map in AAPA with the system in Davidson et al in view of Nanji et al because MPLS tunneling can identify and mark packets with labels to forward the packets (AAPA, page 6, lines 3-8).

Claim 30 discloses the method according to claim 29, further comprising: providing an MPLS function to associate an MPLS LIB with an MPLS interface. AAPA further teaches of an incoming label map is built by being associated with information from the label distribution protocol engine (page 6, line 21 – page 7, line 3).

Claims 31, 35, and 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of D'Sa et al (US PGPUB US2002/0178355).

Claim 31 discloses an application-programming interface (API) for implementing a plurality of different tunneling protocols in a switch or router, said API comprising: a) a tunneling interface data structure having a plurality of parameters; and b) a plurality of functions for setting the parameters of the tunneling interface data structure, wherein a tunneling interface data structure is configurable to implement any one of said plurality of different tunneling protocols by using at least some of said plurality of functions. Davidson et al teaches of routing tables store information associated with data channel addresses (column 5, lines 10-12, column 7, lines 22-26). It fails to teach of a plurality of functions for setting the parameters of the tunneling interface data structure, wherein

a tunneling interface data structure is configurable to implement any one of said plurality of different tunneling protocols by using at least some of said plurality of functions. D'Sa et al teaches of storing VPN data, which stores settings for tunnels (paragraph 40), and uses VPN data to establish a tunnel (paragraph 44).

Davidson et al in view of D'Sa et al are analogous art because they are both related to tunnels in networks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the VPN data in D'Sa et al with the system in Davidson et al because a determination as to which access methods are used in the connection is provided (D'Sa, paragraph 21).

Claim 35 discloses the API according to claim 31, further comprising: c) a plurality of tunnel entry node structures; and d) a plurality of tunnel exit node structures. D'Sa et al further teaches of keeping track of endpoint information (paragraph 42).

Claim 36 discloses the API according to claim 31, wherein: said plurality of functions includes an address function to set tunnel interface source and destination addresses. D'Sa et al further teaches of providing source and destination information (paragraph 42).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of D'Sa et al (US PGPUB US2002/0178355) as applied to claim 31 above, and further in view of Nanji et al (US Patent #6,920,503).

Claim 32 discloses the API according to claim 31, wherein: said plurality of parameters including a local source address and a remote destination address. Davidson et al in view of D'Sa et al teaches of the limitations of claim 31 as recited above. It fails to teach of including a local source address and a remote destination address. Nanji et al further teaches of a session structure, which indicates the egress tunnels (column 4, line 55 – column 5, line 6).

Davidson et al in view of D'Sa et al and Nanji et al are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the session structure in Nanji et al with the system of Davidson et al in view of D'Sa et al because tunnel internetworking enables a provider to carry traffic between different protocols providing service to ISP customers regardless of the protocols used by customers (Nanji, column 5, lines 27-41).

Claims 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of D'Sa et al (US PGPUB US2002/0178355) in view of Nanji et al (US Patent #6,920,503) as applied to claim 32 above, and further in view of Miller et al (US Patent #6,873,627).

Claim 33 discloses the API according to claim 32, wherein: said plurality of parameters includes a hop limit or time to live. Davidson et al in view of D'Sa et al in view of Nanji et al teaches of the limitations of claim 32 as recited above. It fails to teach of including a hop limit or time to live. Miller et al teaches of including a hop count, which can be set to a limit (column 12, lines 35-49).

Davidson et al in view of D'Sa et al in view of Nanji et al and Miller et al are analogous art because they are both related to packing and sending data over networks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the hop count in Miller et al with the system in Davidson et al in view of D'Sa et al in view of Nanji et al because the number of servers through which a packet is allowed to travel is limited (Miller, column 11, lines 45-46).

Claim 38 discloses the API according to claim 33, wherein: said plurality of functions includes a hop function to set the hop limit for a tunnel interface. Miller et al further teaches of having the ability to set the hop limit (column 12, lines 35-49).

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of D'Sa et al (US PGPUB US2002/0178355) in view of Nanji et al (US Patent #6,920,503) in view of Miller et al (US Patent #6,873,627) as applied to claim 33 above, and further in view of Rekhter et al (US Patent #6,339,595).

Claim 34 discloses the API according to claim 33, wherein: said plurality of parameters includes a tunnel MTU. Davidson et al in view of D'Sa et al in view of Nanji et al in view of Miller et al teaches of the limitations of claim 33 as recited above. It fails to teach of including a tunnel MTU. Rekhter et al teaches of including a MTU (column 41, lines 40-60).

Davidson et al in view of D'Sa et al in view of Nanji et al in view of Miller et al and Rekhter et al are analogous art because they are both related to sending data between networks in tunnels.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the MTU in Rekhter et al with the system in Davidson et al in view of D'Sa et al in view of Nanji et al in view of Miller et al because it will make possible to route to a source address of a fragmented packet (Rekhter, column 41, lines 40-60).

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of D'Sa et al (US PGPUB US 2002/0178355) as applied to claim 36 above, and further in view of Tsirtsis (US PGPUB US 2004/0148428).

Claim 37 discloses the API according to claim 36, wherein: said plurality of functions includes a first address function for IPv4 interfaces and a second address function for IPv6 interfaces. Davidson et al in view of D'Sa et al teaches of the limitations of claim 36 as recited above. It fails to teach of providing IPv4 and IPv6 interfaces. Tsirtsis teaches of using both IPv4 and IPv6 (paragraph 32).

Davidson et al in view of D'Sa et al and Tsirtsis are analogous art because they are both related to packet tunneling.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the interface in Tsirtsis with the system in Davidson et al in view of D'Sa et al because the data is able to be moved in networks that support IPv4, IPv6, or both (Tsirtsis, paragraph 32).

Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al (US Patent #7,111,065) in view of D'Sa et al (US PGPUB US 2002/0178355) as applied to claim 31 above, and further in view of AAPA.

Claim 39 discloses the API according to claim 31, wherein: said plurality of parameters includes MPLS encapsulation information and actions to be performed on MPLS packets. Davidson et al in view of D'Sa et al teaches of the limitations of claim 31 as recited above. It fails to tech of including MPLS encapsulation information and actions to be performed on MPLS packets. AAPA teaches of an incoming label map, which specifies what actions to take when a packet is received (page 6, line 21 – page 7, line 3).

Davidson et al in view of D'Sa et al and AAPA are analogous art because they are both related to tunnel networking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the incoming label map in AAPA with the system in Davidson et al in view of D'Sa et al because MPLS tunneling can identify and mark packets with labels to forward the packets (AAPA, page 6, lines 3-8).

Claim 40 discloses the API according to claim 39, wherein: said plurality of functions includes an MPLS function to associate an MPLS LIB with an MPLS interface. AAPA further teaches of an incoming label map is built by being associated with information from the label distribution protocol engine (page 6, line 21 – page 7, line 3).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Backman et al (US PGPUB US2005/0129001) teaches of routing in a virtual private network. Hauck (US Patent #6,977,932) teaches of network tunneling utilizing micro-flow state information. Raju et al (US PGPUB US2003/0200307) teaches of information object routing in computer networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Gillis whose telephone number is 571-272-7952. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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